

SEARCH REQUEST FORM**Scientific and Technical Information Center**

Requester's Full Name: DAWN GARRETT Examiner #: 76107 Date: June 24, 2004
 Art Unit: 1774 Phone Number: 272-1523 Serial Number: 10/692-562
 Mail Box and Bldg/Room Location: Remsen SC75 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

 Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: OLED Device With Asymmetric Host
 Inventors (please provide full names): Lelia Cosimbescu, William Vreeland,
Scott Conley, Jeri Mount
 Earliest Priority Filing Date: 5/6/2004 10/24/2003

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

*Please search formula I for an
electroluminescent device.*

Thank you.

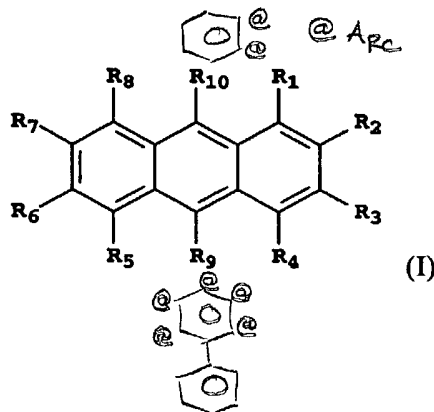
***** STAFF USE ONLY		Type of Search	Vendors and cost where applicable
Searcher: <u>ES</u>	NA Sequence (#)	STN	<u>\$180.33</u>
Searcher Phone #: _____	AA Sequence (#)	Dialog	_____
Searcher Location: _____	Structure (#) <u>✓ (1)</u>	Questel/Orbit	_____
Date Searcher Picked Up: _____	Bibliographic <u>✓ (and)</u>	Dr. Link	_____
Date Completed: <u>6-30-04</u>	Litigation	Lexis/Nexis	_____
Searcher Prep & Review Time: <u>5</u>	Fulltext	Sequence Systems	_____
Clerical Prep Time: _____	Patent Family	WWW/Internet	_____
Online Time: <u>70</u>	Other	Other (specify)	_____

10/692,562

-38-

WHAT IS CLAIMED IS:

1. An OLED device comprising an anode and a cathode and located there-between a light emitting layer containing a light emitting dopant and a host comprising a monoanthracene derivative of formula (I):



wherein

R₁-R₈ are H;

(R₉ is not the same as R₁₀;) (be aware this is hard for us to control)

R₉ is a biphenyl group containing no fused rings with aliphatic carbon ring members;

R₁₀ is an *ortho*-substituted- or *meta* monosubstituted phenyl group;
provided that R₉ and R₁₀ are free of amines and sulfur compounds.

2. The device of claim 1 wherein R₉ is an unsubstituted biphenyl group.
3. The device of claim 1 wherein at least one of the phenyl rings of the biphenyl has a ring fused thereto.
4. The device of claim 1 wherein the biphenyl contains two phenyl ring groups without fused rings.
5. The device of claim 3 wherein the biphenyl is a 2-biphenyl.

6. The device of claim 3 wherein the biphenyl is a 3-biphenyl.
7. The device of claim 3 wherein the biphenyl is a 4-biphenyl.
8. The device of claim 3 wherein all of the phenyl rings are unsubstituted.
9. The device of claim 1 wherein the biphenyl is substituted with at least one substituent selected from fluorine, hydroxy, cyano, and alkyl, alkoxy, aryloxy, aryl, carboxy, trimethylsilyl and heterocyclic oxy groups.
10. The device of claim 1 wherein R₁₀ is *ortho*-substituted.
11. The device of claim 10 wherein the *ortho* substituent is selected from fluorine, hydroxy, cyano, and alkyl, alkoxy, aryloxy, aryl, carboxy, trimethylsilyl and heterocyclic oxy groups.
12. The device of claim 10 wherein the *ortho* substituent is a phenyl group.
13. The device of claim 1 wherein R₁₀ is *meta* mono-substituted.
14. The device of claim 13 wherein the substituent is selected from fluorine, hydroxy, cyano, and alkyl, alkoxy, aryloxy, aryl, carboxy, trimethylsilyl and heterocyclic oxy groups.
15. The device of claim 13 where in the *meta* substituent is a phenyl group.
16. The device of claim 13 where in the *meta* substituent is a naphthyl group.

17. The device of claim 13 wherein the *meta* substituent is a biphenyl group.
18. The device of claim 1 wherein there is also present in the light emitting layer a light emitting compound.
19. The device of claim 18 wherein the light emitting compound emits blue light.
20. The device of claim 18 wherein the light emitting compound emits green light.
21. The device of claim 1 including in one or more light emitting layers compounds sufficient for the device to emit white light.
22. The device of claim 1 including a co-host.
23. The device of claim 22 including a polymeric co-host.
24. The device of claim 22 including an oxinoid compound co-host.
25. The device of claim 24 wherein the oxinoid is Alq.
26. A display incorporating the device of claim 1.
27. An area lighting system incorporating the device of claim 1.

=> file reg

FILE 'REGISTRY' ENTERED AT 21:16:54 ON 30 JUN 2004
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FILE 'LREGISTRY' ENTERED AT 18:09:59 ON 30 JUN 2004

L1 STR
L2 50 S L1
L3 2529 S L1 FUL
SAV L3 YAM353/A
E C60H42
L4 144 S E3
E C48H34
L5 57 S E3
L6 7 S (L4 OR L5) AND L3

FILE 'HCAPLUS' ENTERED AT 18:49:28 ON 30 JUN 2004

L7 40169 S IKEDA ?/AU
L8 26029 S ARAI ?/AU
L9 2034 S FUNAHASHI ?/AU
L10 5865 S HOSOKAWA ?/AU
L11 2 S L7 AND L8 AND L9 AND L10
SEL L11 1-2 RN

FILE 'REGISTRY' ENTERED AT 18:49:51 ON 30 JUN 2004

L12 108 S E1-E108
L13 40 S L12 AND L3
L14 570225 S ?ETHENYL?/CNS
L15 11 S L13 AND L14
E C58H46
L16 17 S E3
L17 1 S L15 AND L16

FILE 'HCAPLUS' ENTERED AT 18:56:31 ON 30 JUN 2004

L18 1 S L17

FILE 'BEILSTEIN' ENTERED AT 18:57:34 ON 30 JUN 2004

L19 STR L1
L20 STR L1

FILE 'REGISTRY' ENTERED AT 19:13:37 ON 30 JUN 2004

L21 5 S L20 SSS SAM SUB=L3
L22 88 S L20 SSS FUL SUB=L3

SAV L22 GAR121/A

FILE 'HCA' ENTERED AT 19:15:30 ON 30 JUN 2004

L23 43 S L22
L24 84014 S (ELECTROLUM!N? OR ORGANOLUM!N? OR (ELECTRO OR ORGANO OR
L25 31 S L23 AND L24
SEL L25 1-31 HIT RN

FILE 'REGISTRY' ENTERED AT 19:16:07 ON 30 JUN 2004

L26 73 S E1-E73
L27 21 S C68H48/MF
L28 1 S C55H37I/MF
L29 13 S C90H54/MF
L30 9 S C43H28N2/MF
L31 24 S C46H28/MF
L32 58 S C40H26/MF
L33 6 S C55H38/MF
L34 17 S C70H50/MF
L35 11 S C41H26CL2/MF
L36 40 S C52H34/MF
L37 17 S C52H30/MF
L38 11 S C96H66/MF
L39 3 S C42H28CL2O/MF
L40 23 S C58H38/MF
L41 79 S C42H28/MF
L42 2 S C54H38O/MF
L43 2 S C49H34CL2/MF
L44 1 S C68H43N/MF
L45 4 S C40H25BR/MF
L46 23 S C66H44/MF
L47 1 S C58H34N2O/MF
L48 366 S L27-L47
L49 32 S L48 AND L26

FILE 'HCA' ENTERED AT 19:46:24 ON 30 JUN 2004

L50 22 S L49
L51 22 S L50 AND L24

FILE 'REGISTRY' ENTERED AT 20:51:38 ON 30 JUN 2004

L52 20 S L19 SSS SAM SUB=L3
L53 STR L19
L54 11 S L53 SSS SAM SUB=L3
L55 113 S L53 SSS FUL SUB=L3
SAV L55 GAR562/A

FILE 'HCA' ENTERED AT 20:55:45 ON 30 JUN 2004

L56 57 S L55
L57 54 S L56 AND L24

FILE 'REGISTRY' ENTERED AT 20:56:06 ON 30 JUN 2004

L58 STR L19
L59 2 S L58 SSS SAM SUB=L3
L60 12 S L58 SSS FUL SUB=L3
SAV L60 GAR562A/A
L61 101 S L55 NOT L60

FILE 'HCA' ENTERED AT 21:00:20 ON 30 JUN 2004

L62 4 S L60
L63 4 S L62 AND L24

FILE 'REGISTRY' ENTERED AT 21:00:59 ON 30 JUN 2004

L64 85 S L61 NOT N/ELS
L65 90 S L61 NOT S/ELS
L66 75 S L64 AND L65
L67 46 S C44H30/MF
L68 2 S C104H72/MF
L69 8 S L66 AND (L67 OR L68 OR L33 OR L46 OR L41)

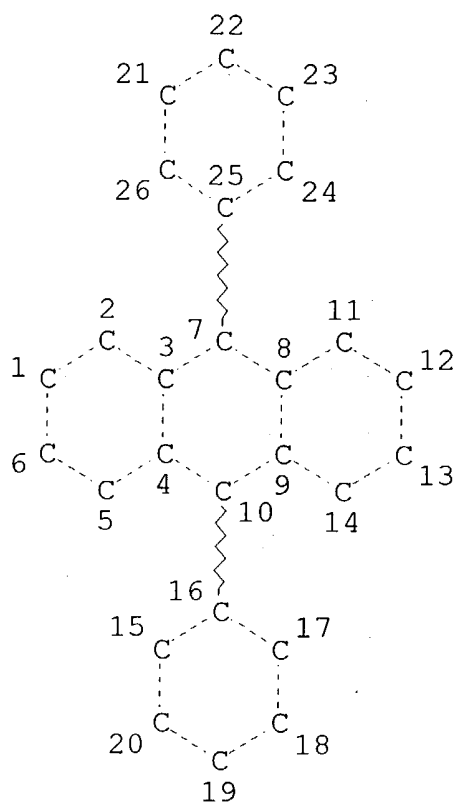
FILE 'HCA' ENTERED AT 21:15:59 ON 30 JUN 2004

L70 9 S L69
L71 8 S L70 AND L24
L72 12 S L63 OR L71

FILE 'REGISTRY' ENTERED AT 21:16:54 ON 30 JUN 2004

=> d l60 que stat

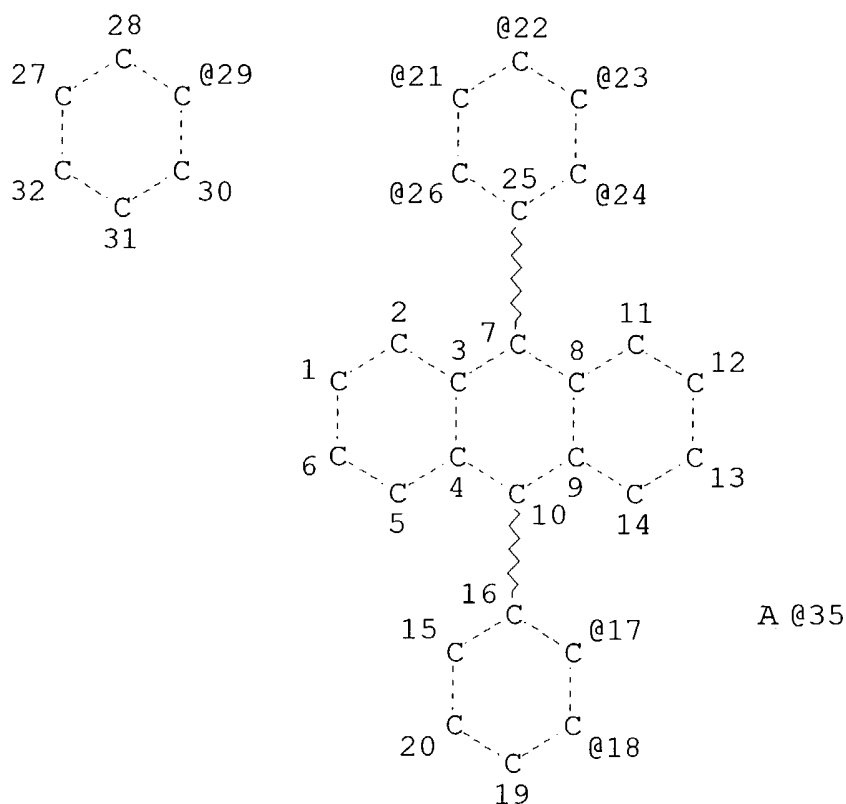
L1 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 26

STEREO ATTRIBUTES: NONE
L3 2529 SEA FILE=REGISTRY SSS FUL L1
L58 STR



VPA 29-24/23/22/21/26 U

VPA 35-17/18 U

NODE ATTRIBUTES:

NSPEC IS C AT 35

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 33

STEREO ATTRIBUTES: NONE

L60 12 SEA FILE=REGISTRY SUB=L3 SSS FUL L58

100.0% PROCESSED 2051 ITERATIONS

SEARCH TIME: 00.00.01

12 ANSWERS

=> file hca

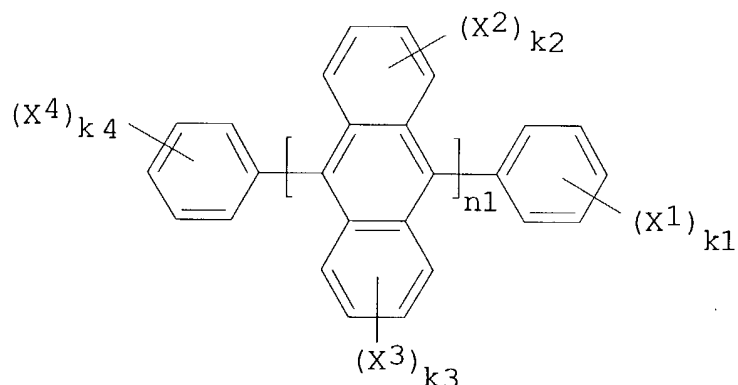
FILE 'HCA' ENTERED AT 21:17:07 ON 30 JUN 2004

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=> d 172 1-12 cbib abs hitstr hitind

L72 ANSWER 1 OF 12 HCA COPYRIGHT 2004 ACS on STN
139:401372 Organic **electroluminescent** device with anthracenyl
derivative in vinyl polymer. Ebisawa, Akira; Shinkai, Masahiro (TDK
Corporation, Japan). Jpn. Kokai Tokkyo Koho JP 2003338375 A2
20031128, 18 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
2003-69137 20030314. PRIORITY: JP 2002-70125 20020314. X

GI



AB The invention refers to an org. **electroluminescent** device
comprising a 9,10-substituted anthracenyl structure I [X1-4 =
substituents; k1, k4 = 0 - 5; k2, k3 = 0 - 4] in a vinyl polymer.

IT 625854-09-3P

(org. **electroluminescent** device with anthracenyl deriv.
in vinyl polymer)

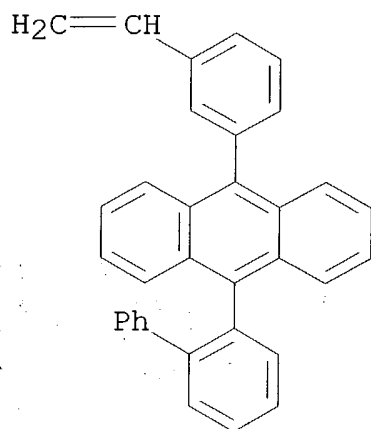
RN 625854-09-3 HCA

CN Anthracene, 9-[1,1'-biphenyl]-2-yl-10-(3-ethenylphenyl)-,
homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 625854-08-2

CMF C34 H24



IC ICM H05B033-14
 ICS C07C001-32; C07C015-60; C08F012-32; C09K011-06
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 ST **electroluminescent** device vinyl polymer anthracene
 IT **Electroluminescent** devices
 (blue-emitting; org. **electroluminescent** device with anthracenyl deriv. in vinyl polymer)
 IT Vinyl compounds, uses
 (polymers; org. **electroluminescent** device with anthracenyl deriv. in vinyl polymer)
 IT 625854-01-5P 625854-05-9P 625854-07-1P **625854-09-3P**
 625854-10-6P 625854-14-0P
 (org. **electroluminescent** device with anthracenyl deriv. in vinyl polymer)
 IT 2156-04-9, 4-Vinylphenyl boronic acid 15016-43-0 400607-16-1
 522616-11-1 625854-03-7 625854-12-8
 (org. **electroluminescent** device with anthracenyl deriv. in vinyl polymer)

L72 ANSWER 2 OF 12 HCA COPYRIGHT 2004 ACS on STN

139:330127 Novel aromatic compound for organic

electroluminescent device. Ikeda, Hidetsugu; Matsuura, Masahide; Funahashi, Masakazu; Hosokawa, Chishio (Idemitsu Kosan Co., Ltd., Japan). PCT Int. Appl. WO 2003087023 A1 20031023, 69 pp. DESIGNATED STATES: W: CN, IN, KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2003-JP4905 20030417. PRIORITY: JP 2002-114400 20020417.

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* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

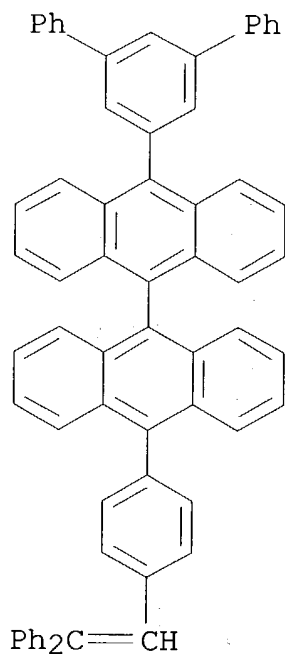
AB The invention refers to a novel arom. compd. comprising a anthracene skeleton and an asym. mol. structure A-Ar-B [Ar = (un)substituted anthracenediyl; B = alkenyl- or arylamine-monosubstituted C2-60 heterocycle or (un)substituted C5-60 aryl; A = I, II, III, IV, V, VI, VII, VIII, IX, X, IX; Ar1-3 = (un)substituted C6-30 aryl; Ar4 = (un)substituted C6-30 arylene; Ar5 = (un)substituted C6-30 trivalent arom.; R1,2 - H, halo, hydroxyl, (un)substituted amino, nitro cyano (un)substituted C1-30 alkyl, C2-40 alkenyl, C5-40 cycloalkyl, C1-30 alkoxy, C5-40 arom. hydrocarbon, C2-40 arom. heterocycle, C7-40 aralkyl, C6-40 aryloxy, C2-30 silyl or carboxyl; Ar1,2 and R1,2 may each join together to form rings].

IT 614734-93-9

(novel arom. compd. for org. **electroluminescent** device)

RN 614734-93-9 HCA

CN 9,9'-Bianthracene, 10-[4-(2,2-diphenylethenyl)phenyl]-10'-[1,1':3',1''-terphenyl]-5'-yl- (9CI) (CA INDEX NAME)



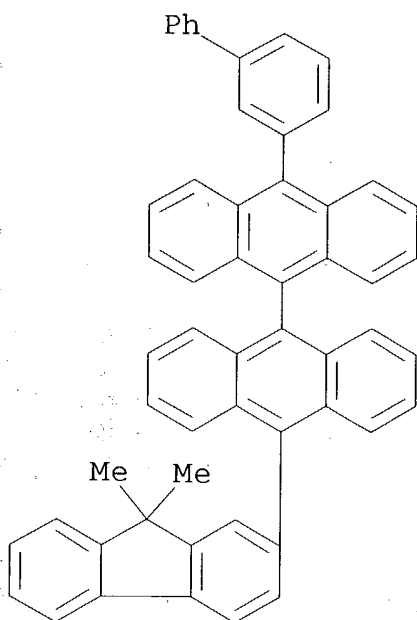
IC ICM C07C015-60

ICS C07C013-66; C07C013-567; C07C211-54; C07D209-86; C07D215-04;
C09K011-06; H05B033-14; H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 25

- ST **electroluminescent** device anthracene deriv
IT **Electroluminescent** devices
(novel arom. compd. for org. **electroluminescent** device)
IT Aromatic hydrocarbons, uses
(novel arom. compd. for org. **electroluminescent** device)
IT 614734-91-7 614734-92-8 **614734-93-9**
(novel arom. compd. for org. **electroluminescent** device)
IT 614734-94-0P 614734-96-2P 614735-00-1P 614735-04-5P
614735-06-7P 614735-09-0P 614735-11-4P
(novel arom. compd. for org. **electroluminescent** device)
IT 98-80-6, Phenyl boronic acid 122-39-4, Diphenylamine, reactions
128-08-5, N-Bromosuccinimide 1564-64-3, 9-Bromoanthracene
5122-94-1, 4-Biphenyl boronic acid 22362-86-3, 9-Iodoanthracene
32316-92-0, 2-Naphthalene boronic acid 63503-60-6, 3-Chlorophenyl
boronic acid 117695-55-3 151169-75-4, 3,4-Dichlorophenylboronic
acid 400607-12-7 474688-73-8 614734-95-1 614735-08-9
614735-10-3
(novel arom. compd. for org. **electroluminescent** device)
IT 7424-72-8P, 9-(2-Naphthyl) anthracene 23674-16-0P 158902-12-6P
349666-30-4P 474688-74-9P 478495-51-1P 614734-97-3P
614734-98-4P 614734-99-5P 614735-01-2P 614735-02-3P
614735-03-4P 614735-05-6P
(novel arom. compd. for org. **electroluminescent** device)
IT 614735-07-8P
(novel arom. compd. for org. **electroluminescent** device)
- L72 ANSWER 3 OF 12 HCA COPYRIGHT 2004 ACS on STN
139:171119 Organic **electroluminescent** device comprising
coupled anthracene fluorene derivative and with amino-substituted
hydrocarbon. Totani, Yoshiyuki; Ishida, Tsutomu; Shimamura,
Takehiko; Tanabe, Yoshimitsu; Nakatsuka, Masakatsu (Mitsui Chemicals
Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2003229273 A2 20030815, 122
pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-25736
20020201.
- AB The invention refers to an org. **electroluminescent** device
comprising one or two fluorene rings directed bonded to an
anthracene and a amino-substituted hydrocarbon.
- IT **577795-82-5**
(org. **electroluminescent** device comprising coupled
anthracene fluorene deriv. and with amino-substituted
hydrocarbon)
- RN 577795-82-5 HCA
CN 9,9'-Bianthracene, 10-[1,1'-biphenyl]-3-yl-10'-(9,9-dimethyl-9H-
fluoren-2-yl)- (9CI) (CA INDEX NAME)



IC ICM H05B033-14
ICS C09K011-06; H05B033-22
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST **electroluminescent** device anthracene fluorene
IT **Electroluminescent** devices
(org. **electroluminescent** device comprising coupled anthracene fluorene deriv. and with amino-substituted hydrocarbon)

IT	400605-92-7	400605-99-4	400606-62-4	400606-71-5	400606-72-6
	400606-81-7	577795-75-6	577795-76-7	577795-77-8	577795-78-9
	577795-79-0	577795-80-3	577795-81-4		

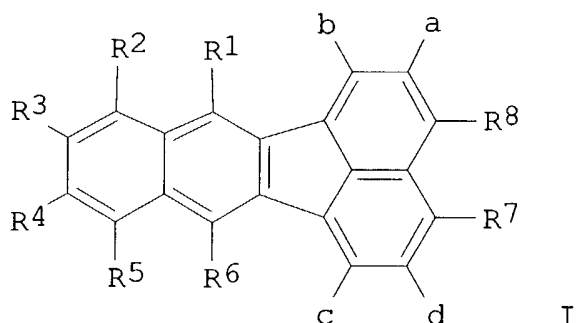
(compds. with fluorenes; org. **electroluminescent** device comprising coupled anthracene fluorene deriv. and with amino-substituted hydrocarbon)

IT	96773-85-2	144810-07-1	150220-33-0	150220-36-3	150973-91-4
	177799-14-3	177799-15-4	177799-16-5	189263-89-6	189263-91-0
	194295-85-7	194295-98-2	194296-12-3	194296-19-0	400606-21-5
	400606-86-2	400606-87-3	522615-57-2	577795-82-5	
	577795-83-6	577795-84-7	577795-85-8	577795-86-9	577795-87-0
	577795-88-1				

(org. **electroluminescent** device comprising coupled anthracene fluorene deriv. and with amino-substituted hydrocarbon)

137:343711 Organic **EL** element and compound having benzofluoranthene derivatives used therein. Fujita, Tetsuji; Kitagawa, Sumiko; Inoue, Tetsushi (TDK Corporation, Japan). PCT Int. Appl. WO 2002085822 A1 20021031, 331 pp. DESIGNATED STATES: W: CN, KR; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2002-JP3925 20020419. PRIORITY: JP 2001-121788 20010419.

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AB Title compd. is represented by a general formula X_nY [$X = I$; $Y =$ a single bond or (un)substituted aryl or heterocyclic linkage; $n = 2$ or 3 ; $R1-8$, $a - d = H$, alkyl, (un)substituted aryl, allyl, heterocyclyl, or arylamino, or amino]. The compd. offers an excellent durability and an excellent color purity with great satisfactory luminescent performance.

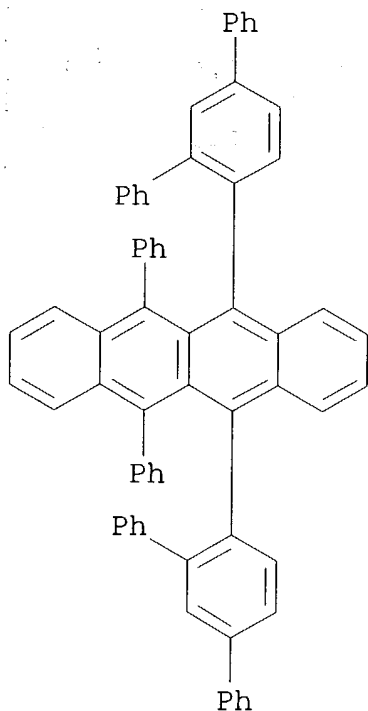
IT 368884-55-3P

(light emitting layer;

electroluminescent devices having benzofluoranthene derivs.)

RN 368884-55-3 HCA

CN Naphthacene, 5,12-diphenyl-6,11-bis([1,1':3',1''-terphenyl]-4'-yl)-
(9CI) (CA INDEX NAME)

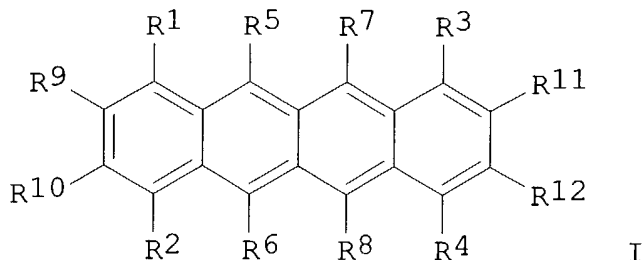


- IC ICM C07C013-62
ICS C07C211-54; C07C211-61; C09K011-06; C07D213-06; C07D333-08;
C07D333-76; H05B033-14; H05B033-22
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related
Properties)
Section cross-reference(s): 24, 76
- ST benzofluoranthene deriv **electroluminescent** device
- IT **Electroluminescent** devices
(benzofluoranthene derivs. of)
- IT 2085-33-8P 172285-83-5P 175606-05-0P 474266-91-6P
474266-92-7P 474266-93-8P 474266-94-9P
(**electroluminescent** devices having benzofluoranthene
derivs.)
- IT 5471-63-6P 7267-03-0P 81090-53-1P 187086-32-4P 276249-59-3P
(**electroluminescent** devices having benzofluoranthene
derivs.)
- IT 203007-32-3P
(hole injection layer; **electroluminescent** devices
having benzofluoranthene derivs.)
- IT 169224-61-7P
(hole transporting layer; **electroluminescent** devices
having benzofluoranthene derivs.)
- IT 16391-62-1P 216066-60-3P 249288-65-1P 272459-50-4P
368884-55-3P

(light emitting layer;
electroluminescent devices having benzofluoranthene
derivs.)

L72 ANSWER 5 OF 12 HCA COPYRIGHT 2004 ACS on STN
136:286307 Naphthacene derivatives, organic **electroluminescent**
devices and materials using them. Kanno, Masaki; Suda, Yasumasa;
Onikubo, Shunichi (Toyo Ink Mfg. Co., Ltd., Japan). Jpn. Kokai
Tokkyo Koho JP 2002097465 A2 20020402, 39 pp. (Japanese). CODEN:
JKXXAF. APPLICATION: JP 2000-289680 20000925.

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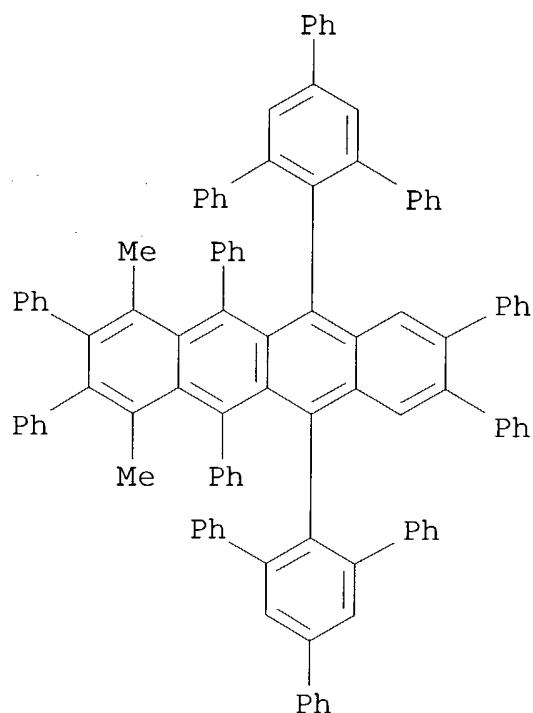
AB The invention relates to an org. **electroluminescent** device
comprising a general formula I [R1-12 = H, halo, or (un)substituted
org. residue groups selected from alkyl, aryl, alkoxy, aryloxy,
alkylthio, arylthio, amino and heterocyclyl; adjacent substituents
of R1-12 may form a ring; ≥ 7 R1-12 are (un)substituted aryl;
R1-4 can not be H simultaneously].

IT 405881-67-6P

(naphthacene derivs., org. **electroluminescent** devices
and materials using them)

RN 405881-67-6 HCA

CN Naphthacene, 1,4-dimethyl-2,3,5,8,9,12-hexaphenyl-6,11-bis(5'-
phenyl[1,1':3',1''-terphenyl]-2'-yl)- (9CI) (CA INDEX NAME)



- IC ICM C09K011-06
ICS C09K011-06; H05B033-14; H05B033-22
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 25
- ST naphthalene deriv **electroluminescent** device
- IT **Electroluminescent** devices
(naphthalene derivs., for)
- IT Fluorescent substances
(naphthalene derivs., org. **electroluminescent** devices and materials using them)
- IT 154-87-0, TDP 574-93-6, Phthalocyanine 808-57-1,
2,3,6,7,10,11-Hexamethoxytriphenylene 905-62-4,
2,5-Bis(1-naphthyl)-1,3,4-oxadiazole 2085-33-8, Alq3 7789-24-4,
Lithium fluoride, uses 19205-19-7, N,N'-Dimethylquinacridone
24936-68-3, Panlite K 1300, uses 37197-21-0 38215-36-0
51325-91-8 90473-15-7 123847-85-8, 4,4'-Bis[N-(1-naphthyl)-N-phenylamino]biphenyl 124729-98-2 142289-08-5 177799-15-4
182507-83-1 188049-39-0 244280-90-8
(naphthalene derivs., org. **electroluminescent** devices and materials using them)
- IT 405880-13-9P 405880-18-4P 405880-24-2P 405880-29-7P
405880-34-4P 405880-39-9P 405880-45-7P 405880-52-6P
405880-57-1P 405880-63-9P 405880-68-4P 405880-74-2P

405880-78-6P 405880-81-1P 405880-86-6P 405880-89-9P
405880-95-7P 405880-99-1P 405881-03-0P 405881-09-6P
405881-13-2P 405881-18-7P 405881-24-5P 405881-33-6P
405881-40-5P 405881-45-0P 405881-51-8P 405881-57-4P
405881-62-1P 405881-64-3P **405881-67-6P** 405881-70-1P
405881-73-4P 405881-79-0P 405881-83-6P 405881-87-0P
405881-91-6P 405881-98-3P 405882-07-7P

(naphthacene derivs., org. **electroluminescent** devices
and materials using them)

IT 104-15-4, reactions 540-49-8, 1,2-Dibromoethylene 3586-66-1
405882-19-1

(naphthacene derivs., org. **electroluminescent** devices
and materials using them)

L72 ANSWER 6 OF 12 HCA COPYRIGHT 2004 ACS on STN

136:191499 Hydrocarbon compound for organic **electroluminescent**
elements and using them. Ishida, Tsutomu; Shimamura, Takehiko;
Totani, Yoshiyuki; Nakatsuka, Masakatsu (Mitsui Chemicals, Inc.,
Japan). PCT Int. Appl. WO 2002014244 A1 20020221, 251 pp.
DESIGNATED STATES: W: KR, US; RW: DE, FR, NL. (Japanese). CODEN:
PIXXD2. APPLICATION: WO 2001-JP6920 20010810. PRIORITY: JP
2000-242476 20000810; JP 2000-268568 20000905.

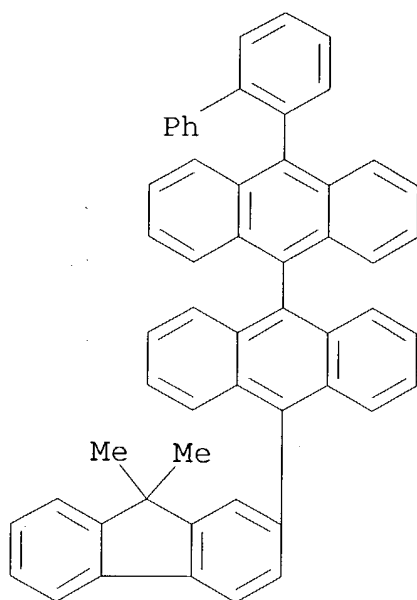
AB Title **electroluminescent** elements comprise one pair of
electrodes and pinched between the electrodes, ≥ 1 layer(s)
contg. ≥ 1 novel hydrocarbon compd. in a general formula
 $X1(F1)j(A1)k(F2)l(A2)m(F3)nX2$ [A1-2 = (un)substituted
anthracenediyl; F1-3 = (un)substituted fluorenediyl; X1-2 = H, halo,
straight, branched or cyclic alkyl, alkoxy, amino, aryl, or
(un)substituted amino, aryl or aralkyl, j,m,n = 0, 1; k,l = 1, 2]
having an anthracene ring and a fluorene ring which are directly
bonded with each other. The compd. can be suitably used for prep.
an org. **electroluminescent** element being excellent in
luminous efficiency and having a long luminous life.

IT **400606-22-6**

(prepn. of hydrocarbon compd. for org. **electroluminescent**
devices)

RN 400606-22-6 HCA

CN 9,9'-Bianthracene, 10-[1,1'-biphenyl]-2-yl-10'-(9,9-dimethyl-9H-
fluoren-2-yl)- (9CI) (CA INDEX NAME)



- IC ICM C07C013-58
ICS C07C025-22; C07C043-235; C07C211-53; C07C211-61; C09K011-06;
C07D213-16; C07D333-18; C07D215-04; H05B033-14
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related
Properties)
Section cross-reference(s): 24, 74
- ST anthracene fluorene **electroluminescent** device
- IT **Electroluminescent** devices
(prepn. of hydrocarbon compd. contg. anthracene and fluorene for)
- IT Fluorescent substances
(prepn. of hydrocarbon compd. contg. anthracene and fluorene for
EL devices)
- IT Hydrocarbons, uses
(prepn. of hydrocarbon compd. contg. anthracene and fluorene for
EL devices)
- IT 2085-33-8
(electron injection/transport layer; prepn. of hydrocarbon compd.
for org. **electroluminescent** devices)
- IT 38215-36-0
(green **light-emitting** component; prepn. of
hydrocarbon compd. for org. **electroluminescent** devices)
- IT 65181-78-4 124729-98-2
(hole injection/transport layer; prepn. of hydrocarbon compd. for
org. **electroluminescent** devices)
- IT 24601-13-6 146162-48-3 146162-54-1
(**light-emitting** layer contg.; prepn. of
hydrocarbon compd. for org. **electroluminescent** devices)

IT 51325-91-8, DCM 1
 (orange **light-emitting** component; prepn. of
 hydrocarbon compd. for org. **electroluminescent** devices)

IT 14221-01-3, Tetrakis(triphenylphosphine)palladium 25067-59-8
 138372-67-5 150405-69-9
 (prepn. of hydrocarbon compd. for org. **electroluminescent**
 devices)

IT 400605-76-7 400605-78-9 400605-79-0 400605-81-4 400605-82-5
 400605-84-7 400605-85-8 400605-87-0 400605-88-1 400605-90-5
 400605-92-7 400605-94-9 400605-96-1 400605-97-2 400605-99-4
 400606-00-0 400606-02-2 400606-03-3 400606-04-4 400606-06-6
 400606-07-7 400606-08-8 400606-09-9 400606-10-2 400606-11-3
 400606-12-4 400606-14-6 400606-15-7 400606-17-9 400606-18-0
 400606-19-1 400606-20-4 400606-21-5 **400606-22-6**
 400606-23-7 400606-24-8 400606-26-0 400606-28-2 400606-30-6
 400606-32-8 400606-34-0 400606-35-1 400606-37-3 400606-39-5
 400606-41-9 400606-43-1 400606-45-3 400606-47-5 400606-48-6
 400606-49-7 400606-50-0 400606-51-1 400606-52-2 400606-53-3
 400606-54-4 400606-55-5 400606-56-6 400606-57-7 400606-58-8
 400606-59-9 400606-60-2 400606-61-3 400606-62-4 400606-63-5
 400606-64-6 400606-65-7 400606-66-8 400606-67-9 400606-68-0
 400606-69-1 400606-70-4 400606-71-5 400606-72-6 400606-73-7
 400606-74-8 400606-75-9 400606-76-0 400606-77-1 400606-78-2
 400606-79-3 400606-80-6 400606-81-7 400606-82-8 400606-83-9
 400606-84-0 400606-85-1 400606-86-2 400606-87-3 400606-88-4
 400606-89-5 400606-90-8 400606-91-9 400606-92-0 400606-93-1
 400606-94-2 400606-95-3 400606-96-4 400606-97-5 400606-98-6
 (prepn. of hydrocarbon compd. for org. **electroluminescent**
 devices)

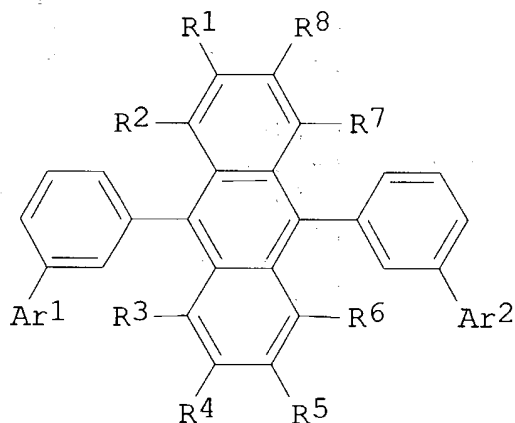
IT 523-27-3 23673-92-9 23674-20-6 121848-75-7 144981-86-2
 144981-88-4 145005-98-7 158902-11-5 278176-05-9 333432-28-3
 334658-75-2 371193-08-7 400606-99-7 400607-00-3 400607-01-4
 400607-02-5 400607-03-6 400607-04-7 400607-05-8 400607-06-9
 400607-07-0 400607-08-1 400607-09-2 400607-10-5 400607-11-6
 400607-12-7 400607-13-8 400607-14-9 400607-15-0 400607-16-1
 400607-17-2 400607-18-3 400607-19-4 400607-20-7 400607-21-8
 400607-22-9 400607-23-0 400607-24-1 400607-25-2 400607-26-3
 400607-27-4 400607-28-5 400607-29-6 400607-30-9 400607-31-0
 400607-32-1 400607-33-2 400607-34-3 400607-35-4 400607-36-5
 400607-37-6 400607-38-7 400607-39-8 400607-40-1 400607-41-2
 400607-42-3 400607-43-4 400607-44-5 400607-45-6 400607-46-7
 400607-47-8 400607-48-9 400607-49-0 400607-50-3 400607-51-4
 400607-52-5 400607-53-6 400607-54-7 400607-55-8 400607-56-9
 400607-57-0 400607-58-1 400607-59-2 400607-60-5 400607-61-6
 400607-62-7 400607-63-8 400607-64-9 400607-65-0 400607-66-1
 400607-67-2 400607-68-3 400607-69-4 400607-70-7 400607-71-8
 400607-72-9 400607-73-0 400607-74-1 400607-75-2 400607-76-3
 400607-77-4 400607-78-5 400607-79-6 400607-80-9 400607-81-0

(prepn. of hydrocarbon compd. for org. **electroluminescent** devices)

L72 ANSWER 7 OF 12 HCA COPYRIGHT 2004 ACS on STN

136:29029 Organic **electroluminescent** component. Ikeda, Shuji; Arai, Hiromasa; Funahashi, Masakazu; Hosokawa, Chishio (Idemitsu Kosan Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001335516 A2 20011204, 28 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-339938 20001108. PRIORITY: JP 1999-316555 19991108; JP 2000-80159 20000322.

GI



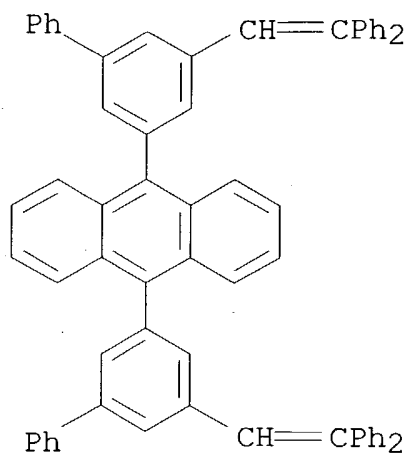
AB The invention refers to an org. **electroluminescent** device comprising the novel compd. I [R1-9 - H, halo cyano, nitro, (un)substituted C1-20 alkyl, alkoxy, C6-30 aryloxy, C1-20 alkylthio, C6-30 arylthio, C7-30 arylalkyl, C5-30 monocyclic, or C10-30 condensed polycyclic; Ar3,4 = (un)substituted C6-30 aryl, C1-20 alkyl, alkoxy, C6-30 aryloxy, C1-20 alkylthio, C6-30 arylthio, C6-30 arylalkyl, C5-30 monocyclic, C10-30 condensed polycyclic, or C5-30 heterocyclic, however Ar3,4 may not be unsubstituted Ph groups].

IT 377738-16-4P 377738-20-0P 377738-27-7P

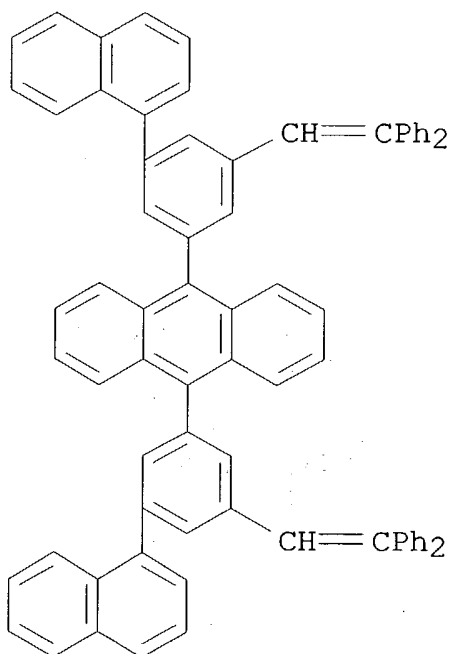
(org. **electroluminescent** component)

RN 377738-16-4 HCA

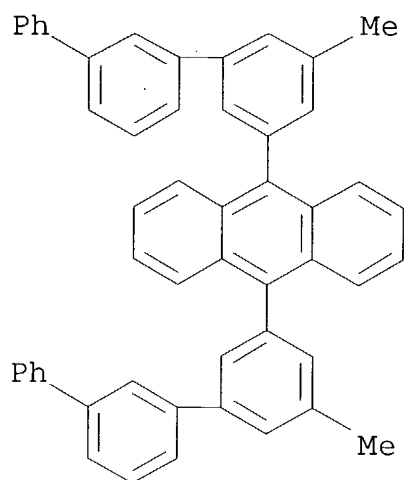
CN Anthracene, 9,10-bis[5-(2,2-diphenylethenyl)[1,1'-biphenyl]-3-yl]-
(9CI) (CA INDEX NAME)



RN 377738-20-0 HCA
 CN Anthracene, 9,10-bis[3-(2,2-diphenylethenyl)-5-(1-naphthalenyl)phenyl]- (9CI) (CA INDEX NAME)



RN 377738-27-7 HCA
 CN Anthracene, 9,10-bis(5-methyl[1,1':3',1''-terphenyl]-3-yl)- (9CI)
 (CA INDEX NAME)



- IC ICM C07C015-27
ICS C07C015-38; C07C015-60; C09K011-06; H05B033-14
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- ST **electroluminescent** device
- IT **Electroluminescent** devices
(org. **electroluminescent** component)
- IT 55035-42-2P 377737-84-3P 377737-87-6P 377737-91-2P
377737-95-6P 377738-03-9P 377738-04-0P 377738-06-2P
377738-09-5P 377738-12-0P **377738-16-4P**
377738-20-0P 377738-23-3P 377738-26-6P
377738-27-7P 377738-29-9P 377738-30-2P
(org. **electroluminescent** component)
- IT 84-65-1, Anthraquinone 98-80-6, Phenyl boronic acid 573-17-1,
9-Bromophenanthrene 583-53-9, 1,2-Dibromobenzene 583-55-1,
2-Bromiodobenzene 589-87-7, 4-Bromiodobenzene 591-18-4,
3-Bromiodobenzene 2052-07-5, 2-Bromobiphenyl 5419-55-6,
Tri-isopropoxy boron 13922-41-3, 1-Naphthalene boronic acid
14221-01-3, Palladium tetrakis(triphenylphosphine) 18648-66-3
31093-44-4, Naphthalene boronic acid 51364-51-3,
Tris(dibenzylidene acetone) dipalladium 54590-37-3 56990-02-4,
3,5-Dibromobenzaldehyde 116941-52-7 164461-18-1 377737-93-4
(org. **electroluminescent** component)
- IT 131-09-9P, 2-Chloroanthraquinone 4688-76-0P, 2-Biphenyl boronic
acid 6485-97-8P, 2-Phenylantraquinone 13029-09-9P,
2,2'-Dibromobiphenyl 18937-92-3P 22082-99-1P,
2-(4-Bromophenyl)naphthalene 24253-37-0P 68572-87-2P,
9-Phenanthrene boronic acid 75295-57-7P 345924-29-0P,
1-(4-Bromophenyl)pyrene 377737-83-2P 377737-85-4P 377737-89-8P
377737-90-1P 377737-92-3P 377738-02-8P 377738-07-3P
377738-10-8P 377738-13-1P 377738-14-2P 377738-15-3P

377738-17-5P 377738-18-6P 377738-22-2P

(org. **electroluminescent** component)

IT 377738-25-5P

(org. **electroluminescent** component)

L72 ANSWER 8 OF 12 HCA COPYRIGHT 2004 ACS on STN

135:325085 Organic **electroluminescent** device. Ara, Kensuke;

Inque, Tetsushi; Fujita, Tetsuji (Tdk Corp., Japan). Eur. Pat.

Appl. EP 1148109 A2 20011024, 327 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP

2001-303660 20010420. PRIORITY: JP 2000-121724 20000421; JP

2001-121664 20010419.

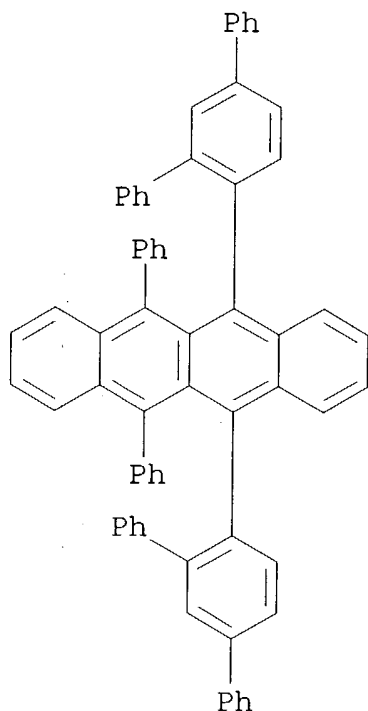
AB Org. **electroluminescent** devices comprising org. layers between a pair of electrodes participating in at least a **light emitting** function are described in which ≥ 1 org. layer contains ≥ 1 naphthacene, tetraaryldiamine, anthracene, and/or quinoxaline deriv. (e.g., as a host material) and ≥ 1 fluoranthene deriv., esp. a diindeno[1,2,3-cd:1',2',3'-lm]perylene deriv. (e.g., as a dopant).

IT **368884-55-3**

(org. **electroluminescent** devices using fluoranthene deriv.-doped materials)

RN 368884-55-3 HCA

CN Naphthacene, 5,12-diphenyl-6,11-bis([1,1':3',1''-terphenyl]-4'-yl)-(9CI) (CA INDEX NAME)

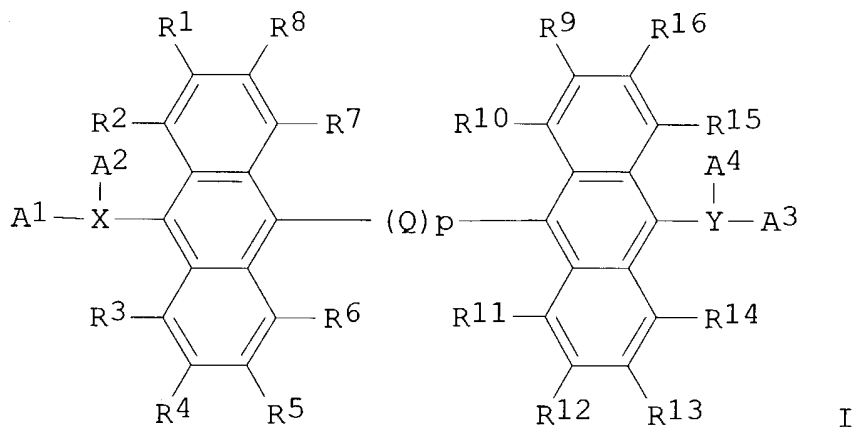


- IC ICM C09K011-06
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 25, 76
 ST org **electroluminescent** device fluoranthene deriv dopant;
 anthracene deriv host fluoranthene deriv dopant org
electroluminescent devic; quinoxaline deriv host
 fluoranthene deriv dopant org **electroluminescent** devic;
 naphthacene deriv host fluoranthene deriv dopant org
electroluminescent devic; tetraaryldiamine deriv host
 fluoranthene deriv dopant org **electroluminescent** devic
 IT **Electroluminescent** devices
 (org.; org. **electroluminescent** devices using
 fluoranthene deriv.-doped materials)
 IT 517-51-1 2085-33-8, Tris(8-hydroxyquinolinato)aluminum
 7429-90-5, Aluminum, uses 7789-24-4, Lithium fluoride, uses
 50926-11-9, ITO 161453-00-5 203007-32-3 216066-60-3
 272459-50-4 312497-16-8 **368884-55-3** 368884-56-4
 368884-58-6
 (org. **electroluminescent** devices using fluoranthene
 deriv.-doped materials)
 IT 169224-61-7 175606-05-0 219318-86-2 368884-57-5
 (org. **electroluminescent** devices using fluoranthene
 deriv.-doped materials)

L72 ANSWER 9 OF 12 HCA COPYRIGHT 2004 ACS on STN

135:280171 Anthracene derivatives and organic **electroluminescent** devices made by using the same. Hosokawa, Chishio; Ikeda, Hidetsugu; Funahashi, Masakazu (Idemitsu Kosan Co., Ltd., Japan). PCT Int. Appl. WO 2001072673 A1 20011004, 71 pp. DESIGNATED STATES: W: CN, IN, JP, KR; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2001-JP2330 20010323. PRIORITY: JP 2000-90644 20000329; JP 2000-319297 20001019.

GI



AB Anthracene derivs. (I); and org. **electroluminescent** (EL) devices each having at least an org. **light-emitting** layer sandwiched between a pair of electrodes and contg. the derivs. [wherein X and Y are each a trivalent group derived from an arom. ring; (1) A1 to A4 are each aryl or a monovalent heterocyclic group or (2) A1 and A3 are each H, and A2 and A4 are each styryl whose Ph moiety may be substituted and which may be substituted by C1-30 alkyl at the α - or β -position; R1 to R16 are each H, halo, cyano, nitro, alkyl, or the like; Q is arylene or the like; and p is 0, 1, or 2]. The anthracene derivs. exhibit high **light emitting** efficiency and heat resistance, when used as the **light-emitting** constituent of org. EL devices.

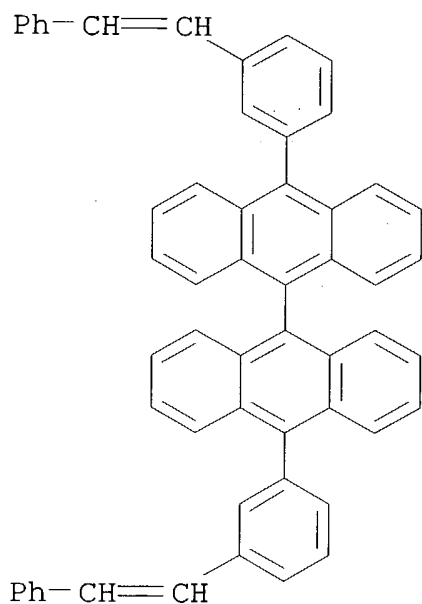
IT 363609-67-0 363609-68-1 363609-70-5
363609-71-6

(anthracene derivs. and org. **electroluminescent** devices made by using the same)

RN 363609-67-0 HCA

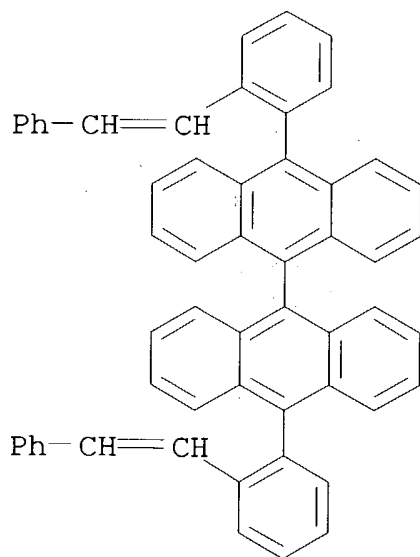
CN 9,9'-Bianthracene, 10,10'-bis[3-(2-phenylethenyl)phenyl]- (9CI) (CA

INDEX NAME)



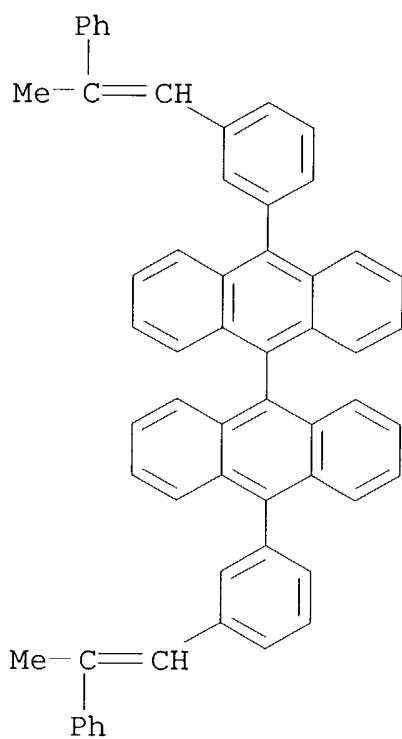
RN 363609-68-1 HCA

CN 9,9'-Bianthracene, 10,10'-bis[2-(2-phenylethenyl)phenyl]- (9CI) (CA INDEX NAME)



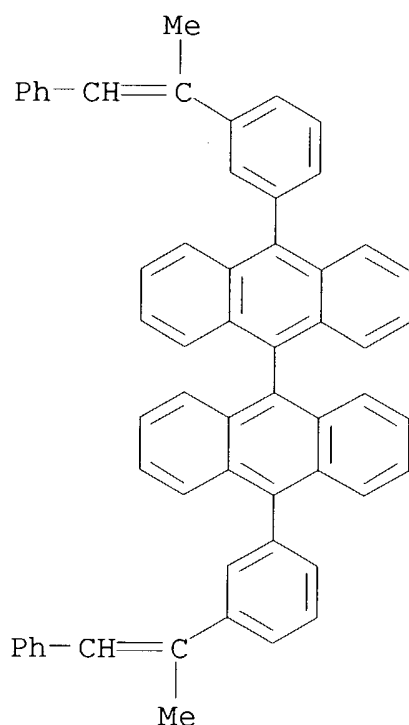
RN 363609-70-5 HCA

CN 9,9'-Bianthracene, 10,10'-bis[3-(2-phenyl-1-propenyl)phenyl]- (9CI) (CA INDEX NAME)



RN 363609-71-6 HCA

CN 9,9'-Bianthracene, 10,10'-bis[3-(1-methyl-2-phenylethenyl)phenyl]-
(9CI) (CA INDEX NAME)



- IC ICM C07C015-27
 ICS C07C013-547; C07C013-19; C07C255-51; C07C015-60; C07C013-45;
 C07D215-06; C07D285-12; C07D207-32; C07D241-42; C07D333-68;
 C07D209-86; C07D213-06; C07D223-28; C07D223-26; C07D249-02;
 C09K011-06; H05B033-14; H05B033-22
- CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 25
- ST anthracene deriv org **electroluminescent** device
- IT **Electroluminescent** devices
 Thermal resistance
 (anthracene derivs. and org. **electroluminescent** devices made by using the same)
- IT 120-12-7, Anthracene, uses 2085-33-8, Tris(8-quinolinolato)aluminum 7429-90-5, Aluminum, uses 50926-11-9, ITO 65181-78-4, TPD 123847-85-8, α -NPD 231606-50-1
 363609-60-3 363609-61-4 363609-62-5 363609-63-6 363609-64-7
 363609-65-8 363609-66-9 **363609-67-0 363609-68-1**
 363609-69-2 **363609-70-5 363609-71-6**
 363609-72-7
 (anthracene derivs. and org. **electroluminescent** devices made by using the same)
- IT 7439-93-2, Lithium, uses

(anthracene derivs. and org. **electroluminescent** devices made by using the same)

L72 ANSWER 10 OF 12 HCA COPYRIGHT 2004 ACS on STN

133:259476 Amino or styryl compound, organic thin film, and **electroluminescent** device. Hosokawa, Chishio; Funahashi, Masakazu; Azuma, Hisahiro; Ikeda, Shuji; Arai, Hiromasa (Idemitsu Kosan Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000273056 A2 20001003, 30 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-352216 19991210. PRIORITY: JP 1999-10660 19990119.

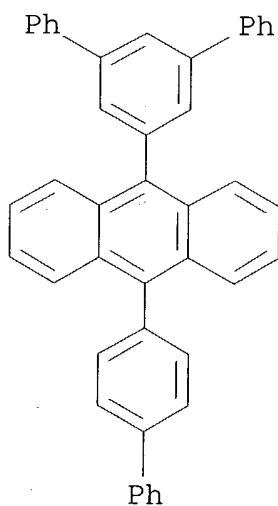
AB The compd. comprises $D1Ar1X1(X2)_n$ (I; $Ar1 = C6-30$ di- or trivalent arom. group; $X1, X2 =$ styryl, styrylaryl, diarylamino, diarylaminoaryl; $n = 0, 1$; if $X1$ or $X2 =$ the styryl group, then $D1 = C16-60$ arom. group having ≥ 4 carbon rings; if $X1$ and $X2 =$ the amino group, then $D1 = C20-60$ arom. group having ≥ 5 carbon rings). I shows good heat resistance (glass transition temp. $\geq 90^\circ$) and long luminescence lifetime.

IT 294881-41-7

(amino or styryl compd. for heat-resistant org. thin film or **electroluminescent** device)

RN 294881-41-7 HCA

CN Anthracene, 9-[1,1'-biphenyl]-4-yl-10-[1,1':3',1''-terphenyl]-5'-yl- (9CI) (CA INDEX NAME)



IC ICM C07C015-60

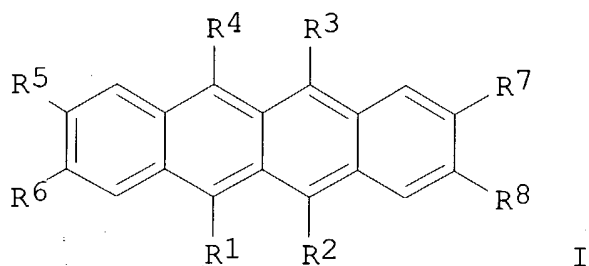
ICS C07C211-54; C07C211-57; C07D209-86; C07D223-24; C09K011-06; H05B033-14; H05B033-22

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 25, 73

ST **electroluminescent** device polycyclic amino styryl compd;

- heat resistant thin film **electroluminescent** compd
- IT **Electroluminescent** devices
(amino or styryl compd. for heat-resistant org. thin film or **electroluminescent** device)
- IT Phosphors
(**electroluminescent**; amino or styryl compd. for heat-resistant org. thin film or **electroluminescent** device)
- IT 294881-17-7P 294881-18-8P 294881-21-3P 294881-24-6P
(amino or styryl compd. for heat-resistant org. thin film or **electroluminescent** device)
- IT 294881-22-4P 294881-23-5P 294881-26-8P 294881-27-9P
(amino or styryl compd. for heat-resistant org. thin film or **electroluminescent** device)
- IT 279672-13-8 294881-28-0 294881-29-1 294881-30-4 294881-31-5
294881-32-6 294881-33-7 294881-34-8 294881-35-9 294881-36-0
294881-37-1 294881-38-2 294881-39-3 294881-40-6
294881-41-7 294881-42-8 294881-43-9 294881-44-0D,
fluorene derivs. 294881-45-1
(amino or styryl compd. for heat-resistant org. thin film or **electroluminescent** device)
- IT 5101-27-9P, 1-Phenylpyrene 23674-20-6P, 9-Bromo-10-phenylanthracene 36809-26-4P, 4-Bromotriphenylamine 202831-65-0P
294881-19-9P 294881-20-2P 294881-47-3P
(in prepn. of amino or styryl compd. for heat-resistant org. thin film or **electroluminescent** device)
- IT 92-86-4, 4,4'-Dibromobiphenyl 106-37-6, 1,4-Dibromobenzene
108-86-1, Bromobenzene, reactions 122-39-4, Diphenylamine, reactions 523-27-3, 9,10-Dibromoanthracene 602-55-1, 9-Phenylanthracene 626-39-1, 1,3,5-Tribromobenzene 776-74-9, α -Bromodiphenylmethane 1714-29-0, 1-Bromopyrene 103068-20-8 173678-07-4, 3,5-Di(1-naphthyl)bromobenzene 201734-64-7 294881-25-7
(in prepn. of amino or styryl compd. for heat-resistant org. thin film or **electroluminescent** device)
- L72 ANSWER 11 OF 12 HCA COPYRIGHT 2004 ACS on STN
- 131:329672 Compounds for organic **electroluminescent** device.
Fujita, Tetsuji; Inoue, Tetsushi; Aotani, Junji (TDK Corporation, Japan). PCT Int. Appl. WO 9957221 A1 19991111, 100 pp. DESIGNATED STATES: W: US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 1999-JP2335 19990430. PRIORITY: JP 1998-137505 19980501.
- GI



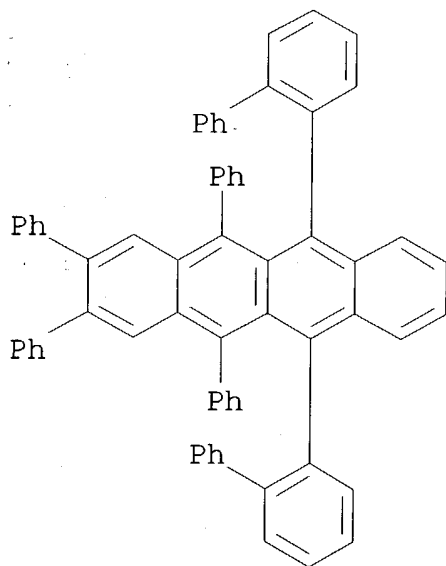
AB The invention relates to a compd. for making a highly durable org. **electroluminescent** device which emits at a sufficient brightness esp. at long wavelengths and retains the satisfactory luminescent performance for long time of periods. Thus the compds. have a basic skeleton represented by I [R1-8 = H, aryl and alkenyl groups; provided that at least 6 of R1 to R8 are aryl and alkenyl groups].

IT **249512-81-0**

(compds. for org. **electroluminescent** device)

RN 249512-81-0 HCA

CN Naphthalene, 6,11-bis([1,1'-biphenyl]-2-yl)-2,3,5,12-tetraphenyl-
(9CI) (CA INDEX NAME)



IC ICM C09K011-06

ICS C07C015-38; C07C015-62; C07C211-54; C07C211-58; C07C211-50;
C07C043-20; C07C043-257; H05B033-14

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related

Properties)

ST org **electroluminescent** device naphthacene rubrene

IT **Electroluminescent** devices

(compds. for org. **electroluminescent** device)

IT 249512-71-8 249512-76-3 249512-79-6 249512-80-9

249512-81-0

(compds. for org. **electroluminescent** device)

IT 106-51-4, 1,4-Benzoquinone, reactions 2548-47-2,
2,3-Diphenylbutadiene 4070-75-1, Dibenzoylethylene 5471-63-6,
1,3-Diphenylisobenzofuran

(compds. for org. **electroluminescent** device)

IT 249512-73-0P 249512-74-1P 249512-75-2P

(compds. for org. **electroluminescent** device)

L72 ANSWER 12 OF 12 HCA COPYRIGHT 2004 ACS on STN

124:71121 Phenylanthracene derivative and organic **EL** element.

Inoue, Tetsushi; Nakaya, Kenji (TDK Corp., Japan). Eur. Pat. Appl.
EP 681019 A2 19951108, 73 pp. DESIGNATED STATES: R: DE, FR, GB,
NL. (English). CODEN: EPXXDW. APPLICATION: EP 1995-302767
19950425. PRIORITY: JP 1994-110569 19940426.

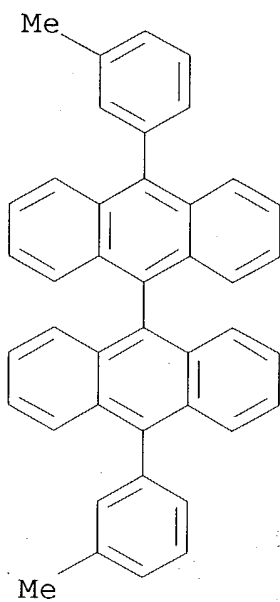
AB Phenylanthracene derivs. of the formula A1-L-A2 (A1 and A2 each are
a monophenylanthryl or diphenylanthryl group and L is a valence bond
or a divalent linkage group, typically arylene) are described.
Their use as org. compd. layers of org. **electroluminescent**
(**EL**) devices, esp. as **light-emitting**
layers for blue **light emission** or as electron
injecting and transporting layers, is indicated.

IT **172285-80-2P 172285-81-3P 172285-85-7P**

(phenylanthracene derivs. and org. **electroluminescent**
elements)

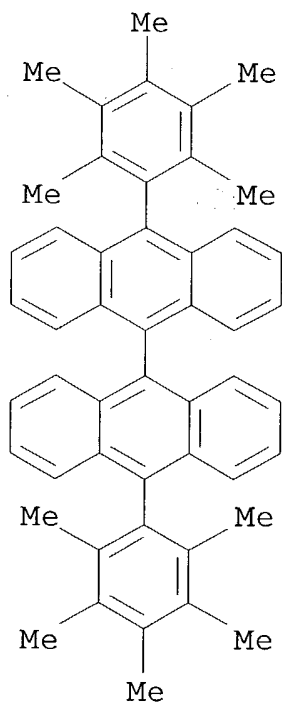
RN 172285-80-2 HCA

CN 9,9'-Bianthracene, 10,10'-bis(3-methylphenyl)- (9CI) (CA INDEX
NAME)

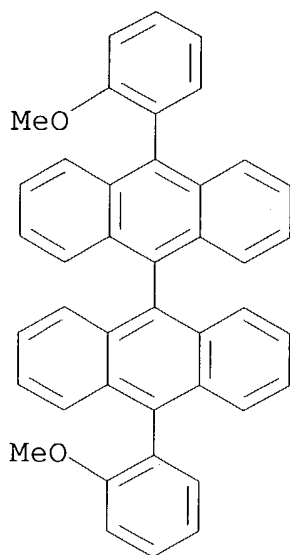


RN 172285-81-3 HCA

CN 9,9'-Bianthracene, 10,10'-bis(pentamethylphenyl)- (9CI) (CA INDEX NAME)



RN 172285-85-7 HCA
 CN 9,9'-Bianthracene, 10,10'-bis(2-methoxyphenyl)- (9CI) (CA INDEX NAME)



IC ICM C09K011-06
 ICS H05B033-14
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 25, 76
 ST phenylanthracene deriv **electroluminescent** device
 IT **Electroluminescent** devices
 (phenylanthracene derivs. and org. **electroluminescent** elements)
 IT 65181-78-4
 (phenylanthracene derivs. and org. **electroluminescent** elements)
 IT 2085-33-8, Tris(8-quinolinolato)aluminum 15570-45-3 51325-05-4,
 Poly(thiophene-2,5-diyl) 169224-61-7
 (phenylanthracene derivs. and org. **electroluminescent** elements)
 IT 172285-72-2P 172285-73-3P 172285-76-6P
 (phenylanthracene derivs. and org. **electroluminescent** elements)
 IT 23102-67-2P 120335-70-8P 172285-74-4P 172285-75-5P
 172285-77-7P 172285-78-8P 172285-79-9P **172285-80-2P**
172285-81-3P 172285-82-4P 172285-83-5P 172285-84-6P
172285-85-7P 172285-86-8P 172285-87-9P 172285-88-0P
 172285-89-1P
 (phenylanthracene derivs. and org. **electroluminescent**

elements)

IT 84-65-1, Anthraquinone 366-18-7, 2,2'-Bipyridine 434-85-5,
Bianthrone 1295-35-8, Bis(1,5-cyclooctadiene)nickel 3001-15-8,
4,4'-DiIodobiphenyl 4294-57-9, 4-Methylphenylmagnesium bromide
43217-27-2, 1-Chloro-9,10-diphenylanthracene 43217-28-3,
2-Chloro-9,10-diphenylanthracene
(phenylanthracene derivs. and org. **electroluminescent**
elements)